Visualization of Cardiac Myxoma Mobility With Real-Time Spiral Magnetic Resonance Imaging

Elmar Spuentrup, MD; Harald P. Kuehl, MD; Alexander Wall, MD; Christopher Heer, MD; Arno Buecker, MD

A 75-year-old woman with atrial fibrillation and progressive heart failure had a transthoracic echocardiogram that showed an enlarged left atrium with a heterogeneous, echodense mass close to the septal base of the mitral valve. During diastole, this mass prolapsed through the mitral annulus into the left ventricle.

Severe dyspnea and arrhythmia nullified standard cardiac-triggered breath-hold cine MR imaging. Real-time spiral MRI allowed for ultrafast data acquisition during free breathing and without cardiac gating (100 ms/image). These images (Figure 1 and Movie) demonstrated the tumor mass, with diastolic prolapse through the mitral annulus. No respiratory or cardiac motion artifacts were seen due to real-time data acquisition.

During surgery, a large myxoma (Figure 2) of the left atrium originating from the atrial septum, close to the base of the mitral valve, was removed.

Figure 1. Real-time spiral MR images (100 ms/image; 3 interleaves) acquired without cardiac triggering and during free breathing. Two frames show prolapse of the mass (arrow) through the mitral annulus. The tumor mass is seen with high contrast. No motion artifacts are present. Note turbulent flow in the enlarged atrium.

Figure 2. Left atrial mass. Histological examination revealed myxoma.
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